

11/07/00
JC960 U.S. PTO

11-09-00

A

Please type a plus sign (+) inside this box **[+]**

PTO/SB/05 (12/97)

Approved for use through 09/30/00. OMB 0651-0032

Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

11/07/00
JC914 U.S. PTO
09/708220
11/07/00

UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No. 004688.P009

Total Pages 2

First Named Inventor or Application Identifier Dan Kikinis

Express Mail Label No. EL627464043US

ADDRESS TO: **Assistant Commissioner for Patents**
Box Patent Application
Washington, D. C. 20231

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. Fee Transmittal Form
(Submit an original, and a duplicate for fee processing)
2. Specification (Total Pages 20)
(preferred arrangement set forth below)
 - Descriptive Title of the Invention
 - Cross References to Related Applications
 - Statement Regarding Fed sponsored R & D
 - Reference to Microfiche Appendix
 - Background of the Invention
 - Brief Summary of the Invention
 - Brief Description of the Drawings (if filed)
 - Detailed Description
 - Claims
 - Abstract of the Disclosure
3. Drawings(s) (35 USC 113) (Total Sheets 4)
4. Oath or Declaration (Total Pages 5) (Unsigned)
 - a. Newly Executed (Original or Copy)
 - b. Copy from a Prior Application (37 CFR 1.63(d))
(for Continuation/Divisional with Box 17 completed) **(Note Box 5 below)**
 - i. **DELETIONS OF INVENTOR(S)** Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
5. Incorporation By Reference (useable if Box 4b is checked)
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.
6. Microfiche Computer Program (Appendix)

7. Nucleotide and/or Amino Acid Sequence Submission
(if applicable, all necessary)
a. Computer Readable Copy
b. Paper Copy (identical to computer copy)
c. Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

8. Assignment Papers (cover sheet & documents(s))
9. a. 37 CFR 3.73(b) Statement (where there is an assignee)
 b. Power of Attorney
10. English Translation Document (if applicable)
11. a. Information Disclosure Statement (IDS)/PTO-1449
 b. Copies of IDS Citations
12. Preliminary Amendment
13. Return Receipt Postcard (MPEP 503) (Should be specifically itemized)
14. a. Small Entity Statement(s)
 b. Statement filed in prior application, Status still proper and desired
15. Certified Copy of Priority Document(s) (if foreign priority is claimed)
16. Other: Express Mail Certificate

17. If a **CONTINUING APPLICATION**, check appropriate box and supply the requisite information:
 Continuation Divisional Continuation-in-part (CIP)
of prior application No: _____

18. **Correspondence Address**

Customer Number or Bar Code Label

(Insert Customer No. or Attach Bar Code Label here)

or

Correspondence Address Below

NAME John P. Ward (Reg. No. 40,216)

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

ADDRESS 12400 Wilshire Boulevard

Seventh Floor

CITY Los Angeles STATE California ZIP CODE 90025-1026

Country U.S.A. TELEPHONE (408) 720-8300 FAX (408) 720-9397

12/01/97

- 2 -

PTO/SB/05 (12/97)

Approved for use through 09/30/00. OMB 0651-0032
Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

FEE TRANSMITTAL FOR FY 2001

TOTAL AMOUNT OF PAYMENT (\$) 890.00

Complete if Known:

Application No. Not yet assigned
 Filing Date Herewith
 First Named Inventor Dan Kikinis
 Group Art Unit Not yet assigned
 Examiner Name Not yet assigned
 Attorney Docket No. 004688.P009

METHOD OF PAYMENT (check one)

1. The Commissioner is hereby authorized to charge indicated fees and credit any over payments to:

Deposit Account Number 02-2666
 Deposit Account Name

Charge Any Additional Fee Required Under 37 CFR 1.16 and 1.17

2. Payment Enclosed:

Check
 Money Order
 Other

FEE CALCULATION

1. BASIC FILING FEE

<u>Large Entity</u>	<u>Small Entity</u>	<u>Fee Description</u>	<u>Fee Paid</u>	
Fee	Fee	Fee		
Code	Code	(\$)		
101	710	201	Utility application filing fee	<u>710.00</u>
106	320	206	Design application filing fee	<u></u>
107	490	207	Plant filing fee	<u></u>
108	710	208	Reissue filing fee	<u></u>
114	150	214	Provisional application filing fee	<u></u>

SUBTOTAL (1) \$ 710.002. EXTRA CLAIM FEES

<u>Extra Claims</u>	<u>Fee from below</u>	<u>Fee Paid</u>
Total Claims <u>30</u> - 20** = <u>10</u>	X <u>18.00</u>	= <u>180.00</u>
Independent Claims <u>3</u> - 3** = <u>0</u>	X <u></u>	= <u>0.00</u>
Multiple Dependent		

**Or number previously paid, if greater; For Reissues, see below.

<u>Large Entity</u>	<u>Small Entity</u>	<u>Fee Description</u>	
Fee	Fee	Fee	
Code	Code	(\$)	
103	18	203	Claims in excess of 20
102	80	202	Independent claims in excess of 3
104	270	204	Multiple dependent claim, if not paid
109	80	209	**Reissue independent claims over original patent
110	18	210	**Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) \$ 180.00

FEE CALCULATION (continued)

3. ADDITIONAL FEES

<u>Large Entity</u>		<u>Small Entity</u>			
Fee Code	Fee (\$)	Fee Code	Fee (\$)	<u>Fee Description</u>	<u>Fee Paid</u>
105	130	205	65	Surcharge - late filing fee or oath	_____
127	50	227	25	Surcharge - late provisional filing fee or cover sheet	_____
139	130	139	130	Non-English specification	_____
147	2,520	147	2,520	For filing a request for reexamination	_____
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	_____
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action	_____
115	110	215	55	Extension for response within first month	_____
116	390	216	195	Extension for response within second month	_____
117	890	217	445	Extension for response within third month	_____
118	1,390	218	695	Extension for response within fourth month	_____
128	1,890	228	945	Extension for response within fifth month	_____
119	310	219	155	Notice of Appeal	_____
120	310	220	155	Filing a brief in support of an appeal	_____
121	270	221	135	Request for oral hearing	_____
138	1,510	138	1,510	Petition to institute a public use proceeding	_____
140	110	240	55	Petition to revive unavoidably abandoned application	_____
141	1,240	241	620	Petition to revive unintentionally abandoned application	_____
142	1,240	242	620	Utility issue fee (or reissue)	_____
143	440	243	220	Design issue fee	_____
144	600	244	300	Plant issue fee	_____
122	130	122	130	Petitions to the Commissioner	_____
123	50	123	50	Petitions related to provisional applications	_____
126	240	126	240	Submission of Information Disclosure Stmt	_____
581	40	581	40	Recording each patent assignment per property (times number of properties)	_____
146	710	246	355	For filing a submission after final rejection (see 37 CFR 1.129(a))	_____
149	710	249	355	For each additional invention to be examined (see 37 CFR 1.129(b))	_____
179	710	279	355	Request for Continued Examination (RCE)	_____
169	900	169	900	Request for expedited examination of a design application	_____

Other fee (specify) _____

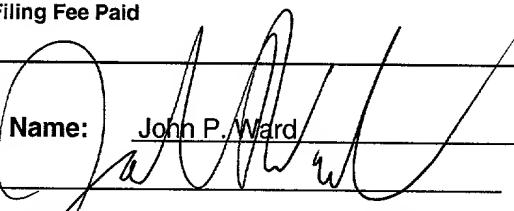
Other fee (specify) _____

SUBTOTAL (3) \$ 0.00

*Reduced by Basic Filing Fee Paid

SUBMITTED BY:

Typed or Printed Name: John P. Ward

Signature:  Date: 11/7/00

Reg. Number: 40,216 Telephone Number: 408-720-8300

10914 U.S. PTO
09/108220
11/07/00



EXPRESS MAIL CERTIFICATE OF MAILING

"Express Mail" mailing label number: EL627464043US

Date of Deposit: November 7, 2000

I hereby certify that I am causing this paper or fee to be deposited with the United States Postal Service "Express Mail Post Office to Addressee" service on the date indicated above and that this paper or fee has been addressed to the Assistant Commissioner for Patents, Washington, D. C. 20231

Julie Arango
(Typed or printed name of person mailing paper or fee)

Julie Arango
(Signature of person mailing paper or fee)

11-7-2000

(Date signed)

EL627464043US

Serial/Patent No.: Not yet assigned Filing/Issue Date: Herewith
Client: Insurfitv

Title: UNIVERSAL PROGRAMMING SYSTEM AND METHOD FOR ELECTRONIC
PROGRAMMING GUIDE

bstz File No.: 004688-0004 Atty/Secty Initials: JPW/CB/jaa
Date Mailed: 11-7-2000 Docket Due Date: 11-7-2000

The following has been received in the U.S. Patent & Trademark Office on the date stamped hereon:

Amendment/Response (____ pgs.) Express Mail No: EL627464043US Check No. 38802
 Appeal Brief (____ pgs.) (in triplicate) Month(s) Extension of Time Amt: \$890.00
 Application - Utility (____ pgs., with cover and abstract) Information Disclosure Statement & PTO-16 (____ pgs.) Check No.
 Application - Rule 1.53(b) Continuation (____ pgs.) Issue Fee Transmittal Amt: _____
 Application - Rule 1.53(b) Divisional (____ pgs.) Notice of Appeal
 Application - Rule 1.53(b) CIP (____ pgs.) Petition for Extension of Time
 Application - Rule 1.53(d) CPA Transmittal (____ pgs.) Petition for _____
 Application - Design (____ pgs.) Postcard
 Application - PCT (____ pgs.) Power of Attorney (____ pgs.)
 Application - Provisional (____ pgs.) Preliminary Amendment (____ pgs.)
 Assignment and Cover Sheet Reply Brief (____ pgs.)
 Certificate of Mailing Response to Notice of Missing Parts
 Declaration & POA (____ pgs.) Small Entity Declaration for Indep. Inventor/Small Business
 Disclosure Docs & Ctg & Copy of Inventor Signed Letter (____ pgs.) Transmittal Letter, in duplicate
 Drawings: 4 # of sheets includes 6 figures Fee Transmittal, in duplicate

Other: _____

APPLICATION FOR UNITED STATES LETTERS PATENT

**UNIVERSAL PROGRAMMING SYSTEM AND METHOD
FOR ELECTRONIC PROGRAMMING GUIDE**

INVENTOR:

DAN KIKINIS
YAKOV KAMEN

PREPARED BY:

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN
12400 WILSHIRE BOULEVARD
SEVENTH FLOOR
LOS ANGELES, CA 90025-1026
(408) 720-8300

Docket No. 004688.P009

EXPRESS MAIL CERTIFICATE OF MAILING

“Express Mail” mailing label number: EL627464043US

Date of Deposit: November 7, 2000

I hereby certify that I am causing this paper or fee to be deposited with the United States Postal Service “Express Mail Post Office to Addressee” service on the date indicated above and that this paper or fee has been addressed to the Assistant Commissioner for Patents, Washington, D. C. 20231

Julie Arango

(Typed or printed name of person mailing paper or fee)

Julie Arango

(Signature of person mailing paper or fee)

11-7-2000

(Date signed)

**UNIVERSAL PROGRAMMING SYSTEM AND METHOD
FOR ELECTRONIC PROGRAMMING GUIDE**

FIELD OF THE INVENTION

5 The present invention relates generally to electronic programming guides and, more particularly, to a programming system for an electronic programming guide.

BACKGROUND OF THE INVENTION

10 Electronic programming guides (EPGs) are often programmed for set-top boxes (STBs), which typically have a low-speed CPU and extremely limited memory. Such EPGs are simple and limited in functionality. For example, most of these EPGs operate in the same basic fashion: scheduled program information is transmitted to a STB on a 15 viewer's premises by an appropriate form of transmission (e.g., broadcast, direct satellite, cable, etc.). The set-top box CPU retains the transmission in memory so that the scheduled programming information may be subsequently viewed on a viewer's television set in response to user-generated signals. The information generally appears in a grid structure on the television screen with multiple columns corresponding to a 20 designated time slot (e.g., 30 minutes) and multiple rows corresponding to a different television channel.

Any minimal design upgrade of the user interface or other EPG functions requires significant redesign of the EPG and reprogramming of the STB. As a result, broadcasters and content developers cannot easily upgrade the software in existing EPGs, 25 and are often even required to replace the hardware, or at least upgrade the memory, CPU, etc. Moreover, because of the limited resolution quality of conventional television screens, the viewer can only see about 1.5 hours of programming at a time for only a few

channels. In addition, current EPGs allow for only one font size. Unfortunately, viewers do not all have the same depth of vision. Therefore, some viewers may be unable to read the programming information on the television screen. Confounding this problem is the fact that existing EPGs do not have very advanced lighting capabilities, which detracts 5 from the functionality of the EPG.

In essence, to date EPG's have been unsophisticated, limited in utility, and difficult to upgrade. This detracts from the enjoyment of television viewing and also limits the viewer's desire to make the upgrades necessary to improve the functionality of existing EPGs.

SUMMARY OF THE INVENTION

The present invention provides an improved EPG that can display programming information in a variety of ways (e.g., 3-D images, alphanumeric text, and video data) and that also allows viewers and/or television programmers to select between varying 5 programming worlds according to viewer and/or programmer preferences.

An EPG in accordance with an embodiment of the present invention provides for a memory or database which contains objects a through n. One class of objects is a pseudo-descriptive language that describes, for example, program events or schedule times. Such an object has a title and/or a channel ID that can be converted into the actual 10 channel number or program association (e.g., Channel 7 equals ABC, etc.).

In a further aspect of the present invention, an additional class of objects contain a variety of world descriptions. This class of objects provides a 3-D enabled EPG, including a 3-D virtual world whose end result is the view that the user gets.

Such multiple user interfaces, environments, and even logics may be loaded into 15 the same device at the same time, and by choosing a particular EPG world, various layouts may be achieved. One layout may mimic the look of a classic 2-D EPG approach. Another layout may mimic, for example, a futuristic science fiction type of environment in space, with rotating carousels showing movie previews, etc. A third layout may offer, for example, an environment mimicking video games such as 20 DOOM™, etc. In addition, there may be a dynamic relationship between the selection of content by a user and the selection of a specific world (e.g., the selection of the sports channel by the user changes the world to a ballpark, the selection of the Disney channel changes the world to a Disney world, etc.).

In these various environments, channels may be organized by different classes so that the EPG world may contain, in addition to its layout and descriptions, one through n elements with objects. In turn, each of these objects may be linked or assigned to one of the items to display, such as schedule items, etc.

5 In addition, there may be non-EPG objects, such as interaction objects. These may be used for e-commerce activities, etc., and may be conflated with the presentation of the world along with the programming schedule items.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention is illustrated by way of example, and not limitation, in the figures of the accompanying drawings in which like reference numerals refer to similar elements and which:

5 **Figure 1** shows a block diagram of a conventional EPG system according to the prior art.

Figure 2 shows an overview of the software architecture of a programming system for an EPG according to an embodiment of the present invention.

10 **Figure 3a** shows a pseudo-descriptive language containing one class of objects for an EPG according to an embodiment of the present invention.

Figure 3b shows a description of a 3-D world in another class of objects for an EPG according to an embodiment of the present invention.

Figure 3c shows a description of a non-EPG object according to an embodiment of the present invention.

15 **Figure 4** is one example of a computer system according to an embodiment of the present invention.

DETAILED DESCRIPTION

Described herein is a universal programming system and method for an EPG. Throughout the following description specific details are set forth in order to provide a more thorough understanding of the invention. However, the invention may be practiced 5 without these particulars. In other instances, well known elements have not been shown or described in detail to avoid unnecessarily obscuring the present invention. Accordingly, the specification and drawings are to be regarded in an illustrative, rather than a restrictive, sense.

One limitation of prior art EPGs is that they are unsophisticated. That is, 10 programming information is typically displayed in a grid structure on a television screen. This information is often not very detailed and may be difficult for some viewers to read. Moreover, prior art EPGs are difficult to upgrade.

It would be helpful if an improved EPG system existed to allow users to display 15 programming information in a variety of ways (e.g., including 3-D images) and to allow users to vary programming worlds according to certain preferences.

Referring now to Figure 1 there is shown a block diagram of a conventional EPG 20 system 100 according to the prior art. A service provider 110 such as a broadcaster or a cable television provider, broadcasts a transmission 115 to a plurality of subscribers, each having a set-top box 120 and 122, etc. Signal may be distributed and received through a variety of means, including optical, microwave, electrical or other forms of transmission. 25 Signal includes EPG data 130 and 132, etc., which is displayed on television screens 134 and 136, etc., as part of television systems 140 and 142, etc. EPG data 130 and 132, etc.,

is displayed in a matrix of rectangular boxes containing text (not shown in this view) in a manner well known in the art.

Referring now to Figure 2 there is shown an overview of the software architecture of a programming system for an EPG 200 according to an embodiment of the present invention. The present invention may be implemented in any television system (not shown in this view) including analog (e.g., using CRTs technology) as well as digital technologies (e.g., HDTV supporting interlaced format). A user interface 201 such as a wireless remote control device (using a signal transmission method such as infrared, RF, inductive, or any other available method) may communicate with the television system.

10 In the present embodiment, the remote control device contains a mechanism (e.g., a joystick, track ball, touch pad, mouse, lever, etc.) by which the user can manipulate a cursor on a television screen. Of course, remote control device could also be any one of numerous control devices known in the art, including a wireless keyboard, a wireless pointer device, etc. It is also possible not to use a remote control device at all, and to just

15 use a key pad, cursor, etc., attached directly to the television system.

In the embodiment illustrated by Figure 2, the software architecture of the programming system 200 resides in a set-top box 210. The set-top box 210 typically includes the user interface 201 which comprises a CPU coupled to a read-only memory (ROM) and a random-access memory (RAM) (not show in this view). The ROM includes instructions and data for executing on the CPU. The RAM is used for storing program variables for the program instructions contained in the ROM. In another embodiment, the software architecture of the system may reside in the television system or may be built into a VCR.

A presentation engine 202 has drivers or connectors 205 a through n. One such driver is driver 203 which connects to the operating system within the set-top box 210 and allows the presentation engine 202 to communicate with such things as a television tuner, data for replenishing programming information, and the like. In addition, there is 5 a memory or database 220 in the system, which contains objects 215 a through n. In the present embodiment, the database 220 resides in the memory. However, since the architecture of the here-referenced system also has hard disks, the database may also be in the hard disk, or in both the memory and the hard disk. An interface 204 provides for a 3-D enabled EPG virtual world whose end result is the view that the user gets. Rather 10 than hard-programming one world into the application and allowing objects such as programs, etc., to be filled-in, numerous objects 215 a through n contain various world descriptions.

The interface 204 displays objects with real shapes on a television screen along with rectangular or bar shaped text blocks (rather than displaying a matrix of rectangular 15 boxes containing text). For example, one method for displaying real shapes involves using 3-D accelerator technology. In one embodiment, the graphics circuitry that provides the information displayed on the television screen stores the image elements in a 3-D model and generates the image using a 3-D accelerator. This is done in a manner similar to that described in our U.S. patent applications 09/344,442 (docket No. Isurftv1) 20 and 09/361,470 (docket No. Isurftv2) and our co-pending application "Electronic Programming Guide" (docket No. Isurftv 12) (all of which describe 3-D accelerator technology and are incorporated herein by reference). Briefly, this is accomplished by a) storing a computer model of a geometric surface of one or more pictograms in a first set

of memory locations within the television STB; b) storing within a second set of memory locations a two dimensional image to be mapped onto that surface (e.g., a pixel array); and c) constructing a pixel array comprising image.

According to the present embodiment, a variety of world descriptions in the 5 objects 215 a through n provide the user with schedule information (or other information as typically presented in EPGs or IPGs) for broadcast programs using the 3-D accelerator technology mentioned herein. These 3-D enabled objects 215 provide a 3-D virtual world whose end result is the view that the user gets. For example, one layout may mimic a futuristic science fiction type of environment in space, with rotating carousels 10 showing movie previews (not shown in this view). Another layout may offer, for example, an environment mimicking video games, such as Doom™, etc. (not shown in this view). Still another environment may offer the look of a classic 2-D EPG approach (not shown in this view).

In these various environments, channels (not shown in this view) may be 15 organized by different classes, so the EPG world may contain, in addition to its layout and world descriptions, a through n elements with objects 215. In turn, each of those objects would then be linked or assigned to one of the items to display, such as schedule items, etc. In addition, there may be a dynamic relationship between the selection by the user of a specific content and the selection of a specific world (e.g., the selection of the 20 sports channel by the viewer changes the world to a ballpark, the selection of the Disney channel changes the world to a Disney world, etc.).

Another class of objects 215 contain a pseudo-descriptive language. Such an object may convert a title or channel identification into an actual channel or program association.

There may also be non-EPG objects 215, such as interaction objects. These may 5 be used for e-commerce activities, etc., and may be mixed in with the presentation of the world along with the programming schedule items. For example, the selection of the sports channel by the user may bring forth a virtual world with the image of a large baseball and bat and a logo indicating that a baseball game is being shown on a particular channel. By clicking on the logo, a user may obtain a list of products that may be 10 purchased using an interactive television system in a manner well known in the art.

In one embodiment, the user can customize which EPG world he wants based on user preferences. For instance, EPG worlds can be catered to age categories of viewers, with particular worlds selected for the interests of senior citizens, teenagers, children, etc.

In another embodiment, the programmer may decide which world the user views. For 15 example, CNN may make a deal with the programmer saying that all CNN channels are to appear in the News World and not the viewer's chosen environment. Or, the programmer may offer 2-3 different world choices, and the viewer may choose among them. Of course, numerous other programming options are available in the system as well.

20 Referring now to Figure 3A there is shown a pseudo-descriptive language containing one class of objects for an EPG 300 according to an embodiment of the present invention. Such an object as shown in Figure 3A has a title 310 and/or a channel identification 320 that may be converted into the actual channel number or

program association. For example, Channel 7 may be converted to ABC, etc. It may have localized aspects such as local start time 335, run length or end time 340, ad overlay 345, permissive choice of advertisements 350, etc. Other important parameters 360 may also be included in the class of objects as demonstrated in Figure 3A.

5 Referring now to Figure 3B there is shown a description of a 3-D world in another class of objects for an EPG 380 according to an embodiment of the present invention. Objects 382, 384, 386, etc., may be used to build the world and then the entire world description 390 is an object itself.

Referring now to Figure 3C there is shown a description of a non-EPG object 392 10 according to an embodiment of the present invention. The objects 393 and 394, etc., in Figure 3C may be interaction objects and can be used for e-commerce activities. The objects 393 and 394, etc., may be mixed in the presentation of the world along with the schedule item objects (not shown in this view).

The system and method disclosed herein may be integrated into advanced 15 Internet-or network-based knowledge systems as related to information retrieval, information extraction, and question and answer systems. Figure 4 is an example of one embodiment of a computer system 400. The system shown has a processor 401 coupled to a bus 402. Also shown coupled to the bus 402 are a memory 403 which may contain objects (See Figure 2 objects 215 a through n). Additional components shown coupled to 20 the bus 402 are a storage device 405 (such as a hard drive, floppy drive, CD-ROM, DVD-ROM, etc.), an input device 406 (such as a keyboard, mouse, light pen, barcode reader, scanner, microphone, joystick, etc.), and an output device 407 (such as a printer, monitor,

speakers, etc.). Of course, an exemplary computer system could have more components than these or a subset of the components listed.

The system and method described herein may be stored in the memory of a computer system (i.e., a set-top box) as a set of instructions to be executed, as shown by 5 way of example in Figure 4. In addition, the instructions to perform the system and method described herein may alternatively be stored on other forms of machine-readable media, including magnetic and optical disks. For example, the system and method of the present invention may be stored on machine-readable media, such as magnetic disks or optical disks, which are accessible via a disk drive (or computer-readable medium drive). 10 Further, the instructions may be downloaded into a computing device over a data network in the form of a compiled and linked version.

Alternatively, the logic to perform the system and method described herein may be implemented in additional computer and/or machine-readable media such as discrete hardware components as large-scale integrated circuits (LSI's), application specific 15 integrated circuits (ASIC's), firmware such as electrically erasable programmable read-only memory (EEPROM's), and electrical, optical, acoustical, and other forms of propagated signals (e.g., carrier waves, infrared signals, digital signals, etc.).

Thus, a universal programming system for an EPG system and method has been described. Although the foregoing description and accompanying figures discuss and 20 illustrate specific embodiments, it should be appreciated that the present invention is to be measured only in terms of the claims that follow.

What is claimed is:

1 1. A system, comprising:
2 a 3-D enabled electronic programming guide (EPG) containing a plurality of
3 virtual worlds; and

4 a presentation engine enabling a user to choose one of the virtual worlds
5 according to preference.

1 2. The system of Claim 1 wherein software architecture of the system resides in a
2 set-top box, a television, or a VCR.

1 3. The system of Claim 1 wherein the presentation engine has a plurality of drivers,
2 one of the drivers enabling the presentation engine to communicate with a television
3 system for replenishing programming information.

1 4. The system of Claim 1 wherein a memory in the system contains a plurality of
2 objects, one class of objects providing the plurality of virtual worlds whose end result is a
3 view that a user gets.

1 5. The system of Claim 4 wherein another class of objects contains a pseudo-
2 descriptive language describing schedule times, this class of objects having a channel
3 identification or title that can be converted into an actual channel number or program
4 identification.

1 6. The system of Claim 5 wherein the class of objects containing the pseudo-
2 descriptive language includes localized aspects.

1 7. The system of Claim 4 wherein another class of objects are non-EPG objects
2 including interaction objects used for e-commerce, one or more of the non-EPG objects
3 conflated with one or more virtual worlds.

1 8. The system of Claim 1 wherein there is a dynamic relationship between the
2 content selected by the user and the selection of the virtual world.

1 9. The system of Claim 1 wherein one of the virtual worlds is displayed in a matrix
2 of rectangular boxes.

1 10. A method, comprising:
2 providing a 3-D enabled electronic programming guide (EPG) comprising a
3 plurality of virtual worlds; and
4 providing a presentation engine enabling a user to choose one of the virtual
5 worlds.

1 11. The method of Claim 10 further comprising the step of providing a plurality of
2 objects in a memory of the EPG.

1 12. The method of Claim 11 wherein the memory is stored in a set-top box, a
2 television system, or a VCR.

1 13. The method of Claim 11 wherein one class of objects provides the plurality of
2 virtual worlds whose end result is a view that a user gets.

1 14. The method of Claim 13 wherein the virtual worlds contain a plurality of other
2 objects, each object linked to an item to display.

1 15. The method of Claim 11 wherein one class of objects contains a pseudo-
2 descriptive language describing schedule times, this class of objects having a channel
3 identification or title that can be converted into an actual channel number or program
4 identification.

1 16. The method of Claim 15 wherein the class of objects containing the pseudo-
2 descriptive language includes localized aspects.

1 17. The method of Claim 11 wherein one class of objects are non-EPG objects
2 including interaction objects used for e-commerce, the non-EPG objects conflated with
3 the plurality of virtual worlds.

1 18. The method of Claim 10 further providing for a dynamic relationship between
2 the content selected by the user and the selection of the virtual world.

1 19. The method of Claim 10 wherein one of the virtual worlds is displayed in a matrix
2 of rectangular boxes.

1 20. A machine-readable storage medium tangibly embodying a sequence of
2 instructions executable by the machine to perform a method for providing for a 3-D
3 enabled electronic programming guide (EPG), the method comprising:

4 providing a plurality of objects in a memory of the EPG, one class of objects
5 comprising one or more virtual worlds whose end result is a view a user gets;

6 providing a presentation engine with a plurality of drivers, one of the drivers
7 enabling the presentation engine to communicate with a television system for
8 replenishing programming information; and

9 providing a plurality of virtual worlds using the presentation engine.

1 21. The machine-readable storage medium of Claim 20 wherein software architecture
2 of the system resides in a set-top box, a television, or a VCR.

1 22. The machine-readable storage medium of Claim 20 wherein the presentation
2 engine has a plurality of drivers, one of the drivers enabling the presentation engine to
3 communicate with a television system for replenishing programming information.

1 23. The machine-readable storage medium of Claim 20 wherein another class of
2 objects contains a pseudo-descriptive language describing schedule times, this class of

3 objects having a channel identification or title that can be converted into an actual
4 channel number or program identification.

1 24. The machine-readable storage medium of Claim 23 wherein the class of objects
2 containing the pseudo-descriptive language includes localized aspects.

1 25. The machine-readable storage medium of Claim 20 wherein another class of
2 objects are non-EPG objects including interaction objects used for e-commerce, the non-
3 EPG objects conflated with the plurality of virtual worlds.

1 26. The machine-readable storage medium of Claim 20 wherein there is a dynamic
2 relationship between content selected by the user and the selection of a virtual world.

1 27. The machine-readable storage medium of Claim 20 wherein one of the virtual
2 worlds is displayed in a matrix of rectangular boxes.

1 28. The machine-readable storage medium of Claim 20 wherein a user of the system
2 chooses a virtual world to display programming information.

1 29. The machine-readable storage medium of Claim 20 wherein a programmer
2 chooses a virtual world to display programming information.

- 1 30. The machine-readable storage medium of Claim 20 wherein a programmer and a
- 2 user choose a virtual world to display programming information.

ABSTRACT

An EPG displays programming information in a variety of ways including using 3-D images, alphanumeric text, and video data. A presentation engine allows viewers and/or programmers to select between varying programming worlds. In addition, non-
5 EPG objects, such as interaction objects, may be conflated with the presentation of the world and with the program schedule information.

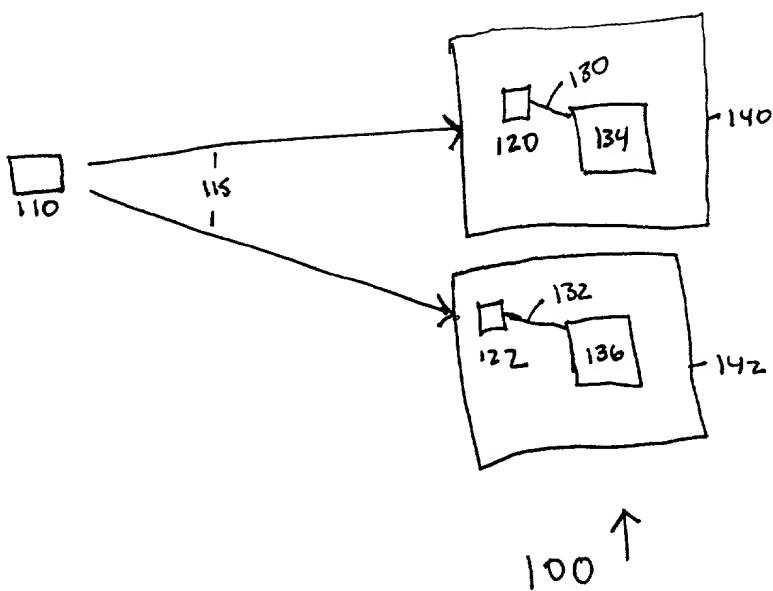


Figure 1

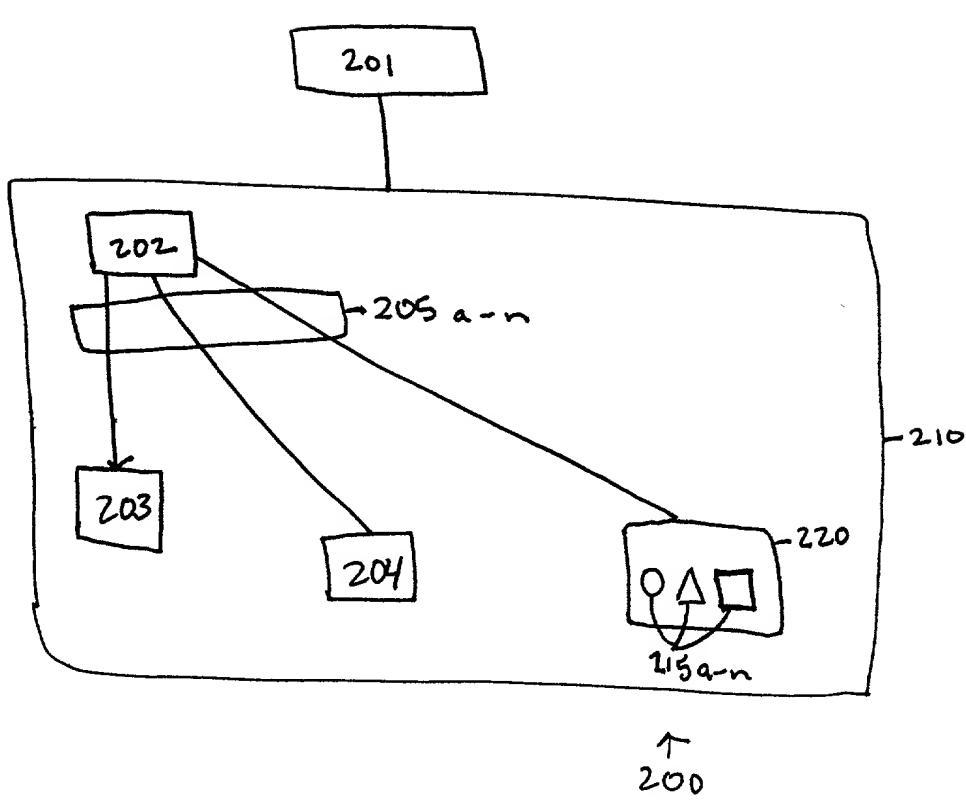


Figure 2

Object Schedule item;

310-Description: Title

320-Description: Channel ID ^{Abs}

300 →

330-Description: Localized

335-Description: Start time

340-Description: Run length

345-Description: Ad overlay; permissive class - 350

350-Description: etc.

End object.

Figure 3A

Object EP6 world (layout selection)

Object layout... End object - 382

Object element... End object - 384

Object element... End object - 386

380 →

390

End object

Figure 3B

Object NONEP6 - Object

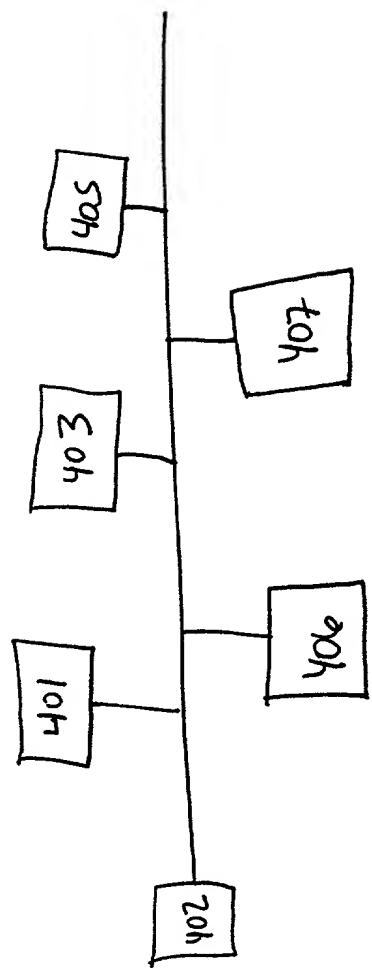
392 → Object . . . End object — 393

Object Interaction . . . End object - 394

End object

Figure 3c

Handwritten



← 0oh

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below, next to my name.

I believe I am the original, first, and sole inventor (if only one name is listed below) or an original, first, and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

Universal Programming System and Method for Electronic Programming Guide

the specification of which

X is attached hereto.
— was filed on (MM/DD/YYYY) _____ as
United States Application Number _____
or PCT International Application Number _____
and was amended on (MM/DD/YYYY) _____.
(if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claim(s), as amended by any amendment referred to above. I do not know and do not believe that the claimed invention was ever known or used in the United States of America before my invention thereof, or patented or described in any printed publication in any country before my invention thereof or more than one year prior to this application, that the same was not in public use or on sale in the United States of America more than one year prior to this application, and that the invention has not been patented or made the subject of an inventor's certificate issued before the date of this application in any country foreign to the United States of America on an application filed by me or my legal representatives or assigns more than twelve months (for a utility patent application) or six months (for a design patent application) prior to this application.

I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d), of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

PATENT COPIES MADE BY
PRINTED IN U.S.A.

<u>Prior Foreign Application(s)</u>			<u>Priority Claimed</u>
<u>(Number)</u>	<u>(Country)</u>	<u>(Foreign Filing Date - MM/DD/YYYY)</u>	<u>Yes</u> <u>No</u>
<u>(Number)</u>	<u>(Country)</u>	<u>(Foreign Filing Date - MM/DD/YYYY)</u>	<u>Yes</u> <u>No</u>
<u>(Number)</u>	<u>(Country)</u>	<u>(Foreign Filing Date - MM/DD/YYYY)</u>	<u>Yes</u> <u>No</u>

I hereby claim the benefit under title 35, United States Code, Section 119(e) of any United States provisional application(s) listed below:

<u>(Application Number)</u>	<u>(Filing Date – MM/DD/YYYY)</u>
<u>(Application Number)</u>	<u>(Filing Date – MM/DD/YYYY)</u>

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

<u>(Application Number)</u>	<u>(Filing Date – MM/DD/YYYY)</u>	<u>(Status -- patented, pending, abandoned)</u>
<u>(Application Number)</u>	<u>(Filing Date – MM/DD/YYYY)</u>	<u>(Status -- patented, pending, abandoned)</u>

I hereby appoint the persons listed on Appendix A hereto (which is incorporated by reference and a part of this document) as my respective patent attorneys and patent agents, with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith.

Send correspondence to John P. Ward, BLAKELY, SOKOLOFF, TAYLOR &
(Name of Attorney or Agent)
ZAFMAN LLP, 12400 Wilshire Boulevard 7th Floor, Los Angeles, California 90025 and direct telephone calls to John P. Ward, (408) 720-8300.
(Name of Attorney or Agent)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of Sole/First Inventor Dan Kikinis

Inventor's Signature _____ Date _____

Residence Saratoga, California _____ Citizenship Winterthur, ZH _____
(City, State) _____ (Country) _____

Post Office Address 20264 Ljepava Drive
Saratoga, California 95070

Full Name of Second/Joint Inventor Yakov Kamen

Inventor's Signature _____ Date _____

Residence Cupertino, California _____ Citizenship Ukraine _____
(City, State) _____ (Country) _____

Post Office Address 19334 Greenwood Drive
Cupertino, California 95014

Full Name of Third/Joint Inventor _____

Inventor's Signature _____ Date _____

Residence _____ Citizenship _____
(City, State) _____ (Country) _____

Post Office Address _____

Full Name of Fourth/Joint Inventor _____

Inventor's Signature _____ Date _____

Residence _____ Citizenship _____
(City, State) _____ (Country) _____

Post Office Address _____

APPENDIX A

William E. Alford, Reg. No. 37,764; Farzad E. Amini, Reg. No. 42,261; William Thomas Babbitt, Reg. No. 39,591; Carol F. Barry, Reg. No. 41,600; Jordan Michael Becker, Reg. No. 39,602; Lisa N. Benado, Reg. No. 39,995; Bradley J. Bereznak, Reg. No. 33,474; Michael A. Bernadicou, Reg. No. 35,934; Roger W. Blakely, Jr., Reg. No. 25,831; R. Alan Burnett, Reg. No. 46,149; Gregory D. Caldwell, Reg. No. 39,926; Andrew C. Chen, Reg. No. 43,544; Thomas M. Coester, Reg. No. 39,637; Donna Jo Coningsby, Reg. No. 41,684; Florin Corie, Reg. No. 46,244; Dennis M. deGuzman, Reg. No. 41,702; Stephen M. De Clerk, Reg. No. 46,503; Michael Anthony DeSanctis, Reg. No. 39,957; Daniel M. De Vos, Reg. No. 37,813; Sanjeet Dutta, Reg. No. 46,145; Matthew C. Fagan, Reg. No. 37,542; Tarek N. Fahmi, Reg. No. 41,402; George Fountain, Reg. No. 37,374; James Y. Go, Reg. No. 40,621; James A. Henry, Reg. No. 41,064; Libby N. Ho, Reg. No. 46,774; Willmore F. Holbrow III, Reg. No. 41,845; Sheryl Sue Holloway, Reg. No. 37,850; George W Hoover II, Reg. No. 32,992; Eric S. Hyman, Reg. No. 30,139; William W. Kidd, Reg. No. 31,772; Sang Hui Kim, Reg. No. 40,450; Walter T. Kim, Reg. No. 42,731; Eric T. King, Reg. No. 44,188; George Brian Leavell, Reg. No. 45,436; Kurt P. Leyendecker, Reg. No. 42,799; Gordon R. Lindeen III, Reg. No. 33,192; Jan Carol Little, Reg. No. 41,181; Robert G. Litts, Reg. No. 46,876; Joseph Lutz, Reg. No. 43,765; Michael J. Mallie, Reg. No. 36,591; Andre L. Marais, under 37 C.F.R. § 10.9(b); Paul A. Mendonsa, Reg. No. 42,879; Clive D. Menezes, Reg. No. 45,493; Chun M. Ng, Reg. No. 36,878; Thien T. Nguyen, Reg. No. 43,835; Thinh V. Nguyen, Reg. No. 42,034; Dennis A. Nicholls, Reg. No. 42,036; Robert B. O'Rourke, Reg. No. 46,972; Daniel E. Ovanezian, Reg. No. 41,236; Kenneth B. Paley, Reg. No. 38,989; Gregg A. Peacock, Reg. No. 45,001; Marina Porthnova, Reg. No. 45,750; William F. Ryann, Reg. 44,313; James H. Salter, Reg. No. 35,668; William W. Schaal, Reg. No. 39,018; James C. Scheller, Reg. No. 31,195; Jeffrey Sam Smith, Reg. No. 39,377; Maria McCormack Sobrino, Reg. No. 31,639; Stanley W. Sokoloff, Reg. No. 25,128; Judith A. Szepesi, Reg. No. 39,393; Vincent P. Tassinari, Reg. No. 42,179; Edwin H. Taylor, Reg. No. 25,129; John F. Travis, Reg. No. 43,203; Joseph A. Twarowski, Reg. No. 42,191; Tom Van Zandt, Reg. No. 43,219; Lester J. Vincent, Reg. No. 31,460; Glenn E. Von Tersch, Reg. No. 41,364; John Patrick Ward, Reg. No. 40,216; Mark L. Watson, Reg. No. 46,322; Thomas C. Webster, Reg. No. 46,154; and Norman Zafman, Reg. No. 26,250; my patent attorneys, and Firasat Ali, Reg. No. 45,715; Justin M. Dillon, Reg. No. 42,486; Thomas S. Ferrill, Reg. No. 42,532; and Raul Martinez, Reg. No. 46,904, my patent agents, of BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP, with offices located at 12400 Wilshire Boulevard, 7th Floor, Los Angeles, California 90025, telephone (310) 207-3800, and James R. Thein, Reg. No. 31,710, my patent attorney with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith.

0020000000000000

APPENDIX B

Title 37, Code of Federal Regulations, Section 1.56 Duty to Disclose Information Material to Patentability

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclosure information exists with respect to each pending claim until the claim is cancelled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is cancelled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclosure all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

(1) Prior art cited in search reports of a foreign patent office in a counterpart application, and

(2) The closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.

(b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made or record in the application, and

(1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or

(2) It refutes, or is inconsistent with, a position the applicant takes in:

(i) Opposing an argument of unpatentability relied on by the Office, or

(ii) Asserting an argument of patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

(c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:

(1) Each inventor named in the application;

(2) Each attorney or agent who prepares or prosecutes the application; and

(3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.

(d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.